

NCL-19-7584



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⑤

D5610-1TRN
Job Sheet 197722

**Part No:** D5610-1TRN**Job Qty:** 1 pcs**Part Name:** EC130 Aft Crosstube Turning Detail**Part Weight:** 0 lbs**Status:** New**Priority:** Medium**Job Created:** 7/15/19**Job Tracking No:****Due Date:** 7/26/19**Created By:** Marie Lajeunesse**Type:** Stock**Description:****Note:** D5610 REV.B IPP REV:A 18.07.04 NEW ISSUE DD VERF:JFS**Ship Via:****Bill of Materials****Job Routing**

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Lead Time	DAS Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier			
100	Mori Seiki TL-40 - 1	1 pcs	7/26/19	7/26/19	1.00	2.00	Mori Seiki TL-40 - 1			662019-07-25 9-89
110	QC 2	1 pcs	7/26/19	7/26/19	0.00	0.00	QC 2 - 1			
							QC 2 - 12			
							QC 2 - 14			
							QC 2 - 17			
							QC 2 - 19			
							QC 2 - 2			
							QC 2 - 20			
							QC 2 - 22			
							QC 2 - 23			
							QC 2 - 25			
							QC 2 - 32			
							QC 2 - 33			
							QC 2 - 35			
							QC 2 - 39			
							QC 2 - 4			
							QC 2 - 40			
							QC 2 - 44			
							QC 2 - 45			
							QC 2 - 48			
							QC 2 - 49			
							QC 2 - 50			
							QC 2 - 51			
							QC 2 - 52			
							QC 2 - 57			
							QC 2 - 62			
							QC 2 - 63			
							QC 2 - 8			DAS 662019-07-25 9-89
							QC 2 - 66			
							QC 2 - 64			
							QC 2 - 65			

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P.T.O.

					QC 2 - 5	
					QC 2 - 71	
					QC 2 - 73	
					QC 2 - 69	
120	Mori Seiki TL-40 - 1 - B4B	1 pcs	7/26/19	1.00 2.00	Mori Seiki TL-40 - 1 - B4B	DAS 662019-07-25 9-89
130	QC 2	1 pcs	7/26/19	0.00 0.00	QC 2 - 1	
					QC 2 - 12	
					QC 2 - 14	
					QC 2 - 17	
					QC 2 - 19	
					QC 2 - 2	
					QC 2 - 20	
					QC 2 - 22	
					QC 2 - 23	
					QC 2 - 25	
					QC 2 - 32	
					QC 2 - 33	
					QC 2 - 35	
					QC 2 - 39	
					QC 2 - 4	
					QC 2 - 40	
					QC 2 - 44	
					QC 2 - 45	
					QC 2 - 48	
					QC 2 - 49	
					QC 2 - 50	
					QC 2 - 51	
					QC 2 - 52	
					QC 2 - 57	
					QC 2 - 62	
					QC 2 - 63	
					QC 2 - 8	DAS
					QC 2 - 66	662019-07-26
					QC 2 - 64	9-89
					QC 2 - 65	
					QC 2 - 5	
					QC 2 - 71	
					QC 2 - 73	
					QC 2 - 69	
140	QC 8	1 pcs	7/26/19	0.00 0.00	QC 8 - 12	
					QC 8 - 14	
					QC 8 - 17	
					QC 8 - 20	
					QC 8 - 25	
					QC 8 - 3	
					QC 8 - 32	
					QC 8 - 33	
					QC 8 - 35	
					QC 8 - 39	
					QC 8 - 4	
					QC 8 - 44	
					QC 8 - 45	
					QC 8 - 49	
					QC 8 - 58	
					QC 8 - 8	
					QC 8 - 9	
					QC 8 - 68	
					QC 8 - 67	
					QC 8 - 1 (A)	

					QC 8 - 47	
					QC 8 - 40	
					QC 8 - 52	
					QC 8 - 23	
					QC 8 - 57	
145	Crosstubes - 4 - B4B	1 pcs	7/26/19	0.00 0.67	Crosstubes - 1 - B4B	
					Crosstubes - 2 - B4B	
					Crosstubes - 3 - B4B	
					Crosstubes - 4 - B4B	
150	Crosstubes - 5 - B4B	1 pcs	7/26/19	0.00 1.00	Crosstubes - 1 - B4B	
					Crosstubes - 2 - B4B	
					Crosstubes - 3 - B4B	
					Crosstubes - 4 - B4B	
160	QC 7	1 pcs	7/26/19	0.00 0.00	QC 7 - 10	
					QC 7 - 13	
					QC 7 - 14	
					QC 7 - 15	
					QC 7 - 17	
					QC 7 - 18	
					QC 7 - 19	
					QC 7 - 2	
					QC 7 - 28	
					QC 7 - 3	
					QC 7 - 30	
					QC 7 - 34	
					QC 7 - 36	
					QC 7 - 37	
					QC 7 - 41	
					QC 7 - 47	
					QC 7 - 48	
					QC 7 - 51	
					QC 7 - 58	
					QC 7 - 59	
					QC 7 - 60	
					QC 7 - 9	
					QC 7 - 68	
					QC 7 - 50	
					QC 7 - 67	
					QC 7 - 40	
					QC 7 - 24	
					QC 7 - 43	
					QC 7 - 61	
					QC 7 - 81	
170	Packaging 3-1 - Stock - B4B	1 pcs	7/26/19	0.00 0.00	Packaging 3 - 1 - B4B	
					Packaging 3 - 2 - B4B	
					Packaging 3 - 3 - B4B	
					Packaging 3 - 4 - B4B	
					Packaging 3 - 5 - B4B	
					Packaging 3 - 6 - B4B	
					Packaging 3 - 7 - B4B	
					Packaging 3 - 8 - B4B	
					Packaging 3 - 9 - B4B	
					Packaging 3 - 10 - B4B	
					Packaging 3 - 11 - B4B	
					Packaging 3 - 12 - B4B	
					Packaging 3 - 13 - B4B	
					Packaging 3 - 14 - B4B	
					Packaging 3 - 15 - B4B	
					Packaging 3 - 16 - B4B	

				Packaging 3 - 17 - B4B	
				Packaging 3 - 18 - B4B	
				Packaging 3 - 19 - B4B	
				Packaging 3 - 20 - B4B	
				Packaging 3 - 21 - B4B	
				Packaging 3 - 22 - B4B	
				Packaging 3 - 23 - B4B	
				Packaging 3 - 24 - B4B	
				Packaging 3 - 25 - B4B	
				Packaging 3 - 26 - B4B	
				Packaging 3 - 27 - B4B	
				Packaging 3 - 28 - B4B	
				Packaging 3 - 29 - B4B	
				Packaging 3 - 30 - B4B	
				Packaging 3 - 31 - B4B	
				Packaging 3 - 32 - B4B	
				Packaging 3 - 33 - B4B	
				Packaging 3 - 34 - B4B	
				Packaging 3 - 35 - B4B	
				Packaging 3 - 36 - B4B	
180 QC 21 - SA	1 pcs	7/26/19	0.00 0.00	QC 21 - SA - 21	0.00
				QC 21 - SA - 70	2.00
				QC 21 - SA - 53	0.00

Part Op 100 - 1- Fill tube with sand & install plugs 2- Face and chamfer both ends as per Folio FC197 3- Turn first taper section on

Descriptions: both side

110 - QC2- Inspect parts off machine FAI/FAIB

120 - 1- Turn second taper on both side 2- Scribe part # and batch # using vibrating stylus on INSIDE the cuff as per Dwg D5610-TRN

130 - QC2- Inspect parts off machine FAI/FAIB

140 - QC8- Inspect parts - second check

145 - GRIND ONLY TRANSITION LINES SMOOTH LONGITUDE WAY.

150 - 1- handfinish X-TUBE INSIDE AND OUT

160 - ***IDENTIFY SERIAL/ P/N # BY USING A MARKER IN THE MIDDLE OF TUBE AT CONTAINER CREATION***

INSPECT ALODINE AND MAKE SURE TUBE IS IDENTIFY WITH MARKER IN THE MIDDLE OF THE TUBE

170 - ***IDENTIFY SERIAL # BY USING A MARKER IN THE MIDDLE OF TUBE AT CONTAINER CREATION***

INSPECT ALODINE AND MAKE SURE TUBE IS IDENTIFY WITH MARKER IN THE MIDDLE OF THE TUBE

180 - QC21- Final Inspection - Work Order Release

AUG 8 1 2019

Job BOM				
Part / Item	Component Name	Quantity	Operation	Container
D6030-140	Tube, Seamless	1 pcs (1 ea)	100-Mori Seiki TL-40 - 1	S193460

Job Allocations				
Operation	Component Part	Required	Inventory	Allocated
100-Mori Seiki TL-40 - 1	D6030-140	1	17	0

Part Specifications	
Specifications could not be found.	



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Plex 7/15/19 3:33 PM Dart.lajeunesse.marie

Container No: S200607



Part: D5610-1TRN

Job No: 197722

Serial No/Batch: S200607

Revision: B

Inspector:

Exp Date:

Instructions: Various STC's

Date: 07/26/19

(5)

DART AEROSPACE LTD		Work Order: 197722
Description: Crosstube Assembly		Part Number: DSG10-1TRN
Inspection Dwg: B	Rev: B	Page 1 of 2

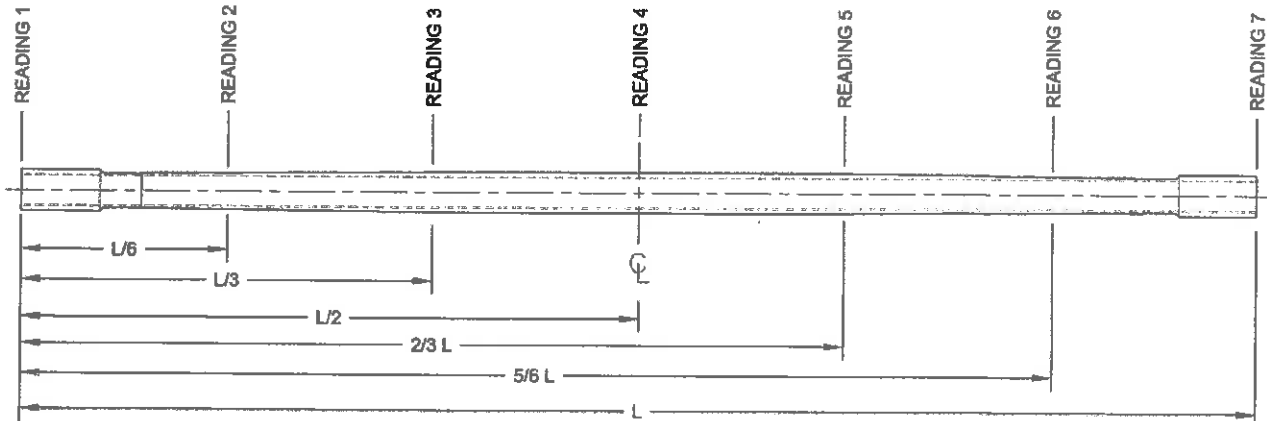
FIRST ARTICLE INSPECTION CHECKLIST

	Inspection Sheet Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	3.300	+0.005/-0.000	3.305	✓		CNC-OS	
	3.344	+0.005/-0.000	3.349	✓		"	
	3.398	+0.005/-0.000	3.403	✓		"	
	3.457	+0.005/-0.000	3.461	✓		"	
	3.518	+0.005/-0.000	3.523	✓		"	
	3.543	+0.005/-0.000	3.538	✓		"	Stock Mat
SIDE B	3.300	+0.005/-0.000	3.304	✓		CNC-OS	
	3.344	+0.005/-0.000	3.349	✓		"	
	3.398	+0.005/-0.000	3.403	✓		"	
	3.457	+0.005/-0.000	3.462	✓		"	
	3.518	+0.005/-0.000	3.523	✓		"	
	3.543	+0.005/-0.000	3.541	✓		"	Stock Mat
	116.26	+/- 0.30	116.26	✓		Tape	

5

DART AEROSPACE LTD		Work Order: 197722
Description: Crosstube Assembly		Part Number: 05610-1TRN
Inspection Dwg: B	Rev: B	Page 2 of 2

WALL THICKNESS MEASUREMENT



Location	WALL THICKNESS MEASUREMENT (IN)				Deviation Δw (max-min)	TOLERANCE
	w1	w2	w3	w4		
READING 1 L= 0"	.198	.176	.181	.194	.022	X/.030
READING 2 L= 19.38	.261	.238	.240	.261	.023	
READING 3 L= 38.75	.310	.291	.305	.321	.030	
READING 4 L= 58.13	.323	.310	.310	.322	.013	
READING 5 L= 77.51	.324	.300	.299	.321	.025	
READING 6 L= 96.88	.241	.238	.249	.246	.011	
READING 7 L= 116.26	.189	.178	.191	.191	.013	

Calibration Result

Actual Block Thickness: 100-400

Sitescan 250 Measured Thickness: 100-400

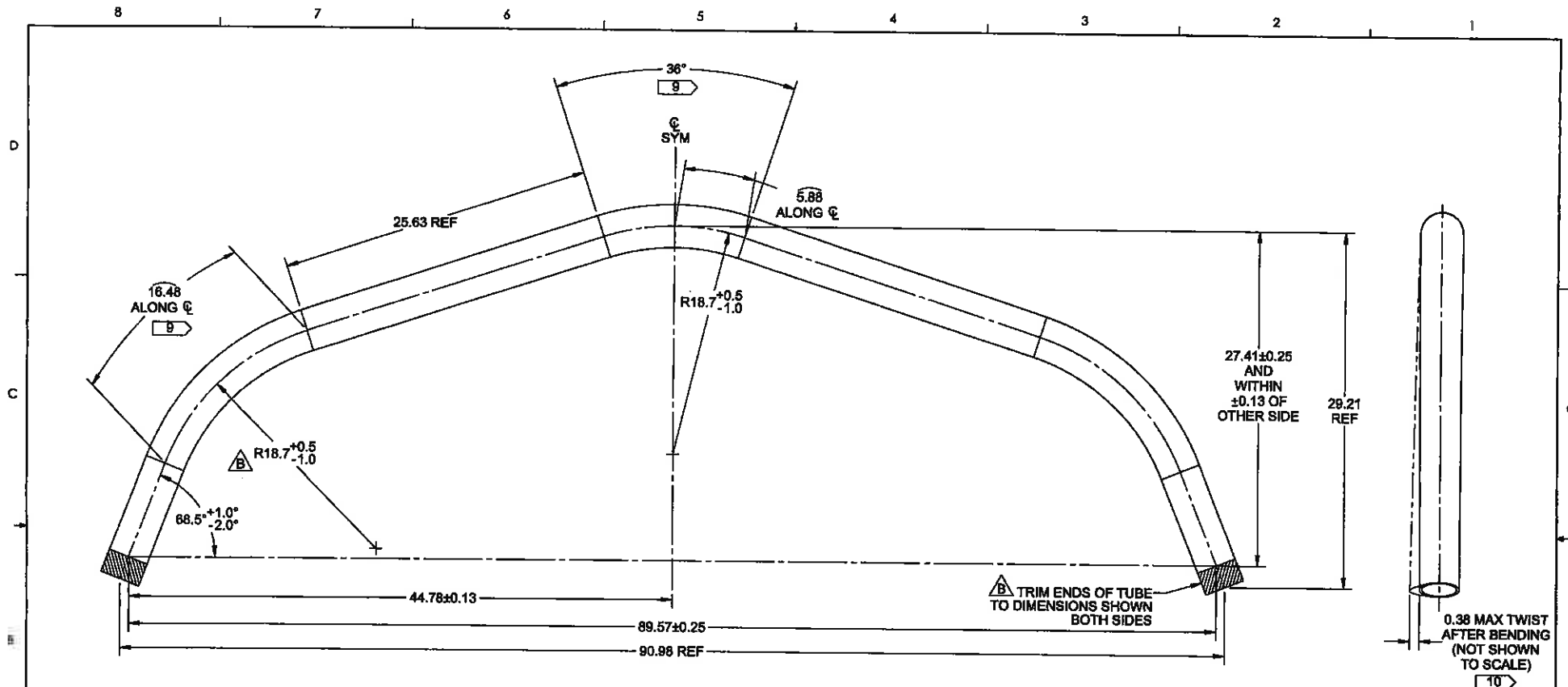
Measured by: DAS 66
9-89
Date: 2019-07-26

Audited by: DAS 47
9-89
Date: 19-07-29

Preliminary Approval: _____
Date: _____

Rev	Date	Change	Revised by	Approved
B	10.04.14	Added preliminary approval	KJ	
C	12.06.01	Wall thickness form added	KJ	

Q



D5610-1 AFT X-TUBE (EC130)

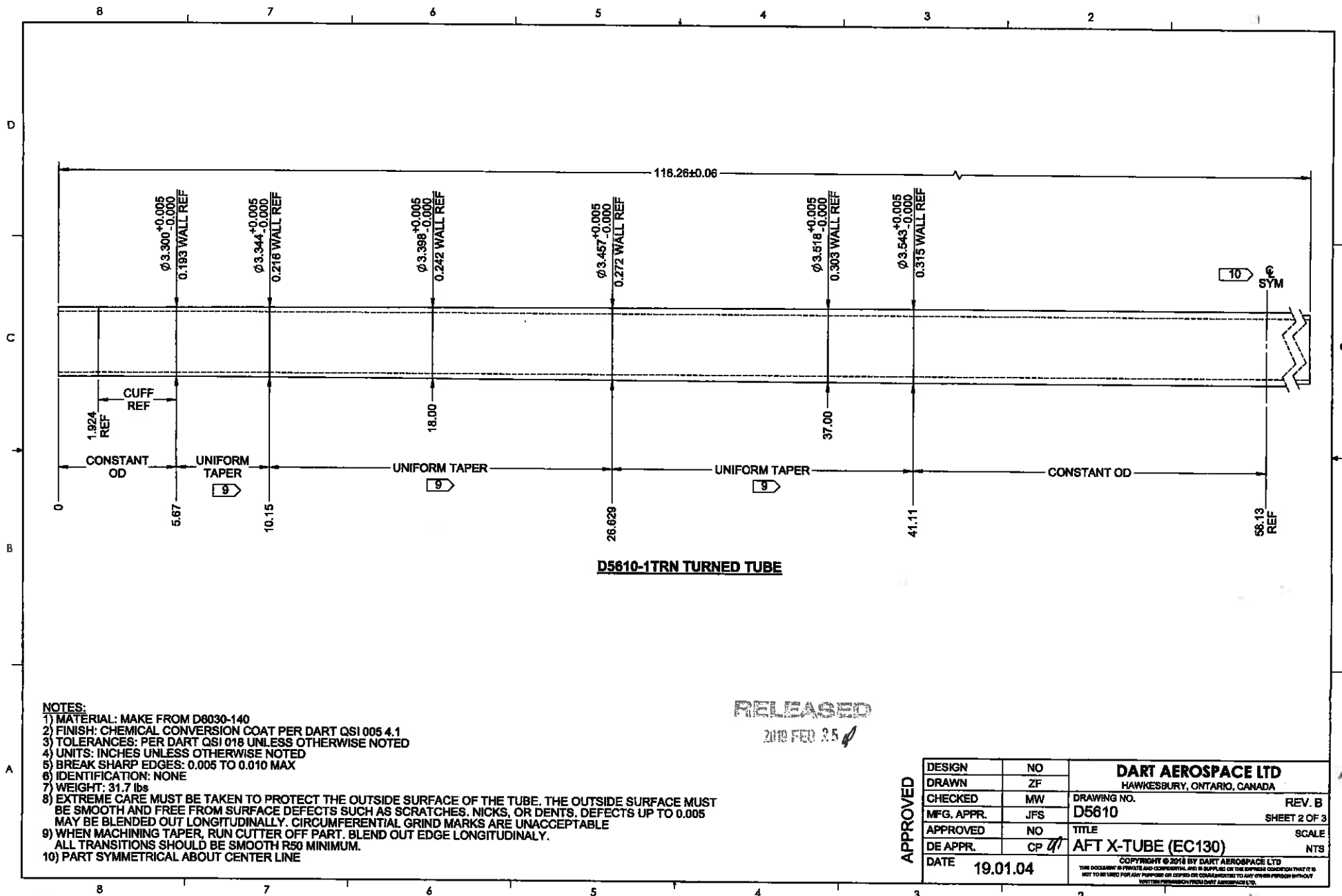
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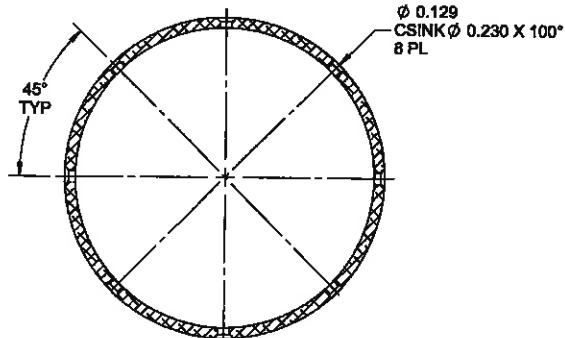
- 1) MATERIAL: MAKE FROM D5610-1TRN
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 30.9 lbs
- 8) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, WRINKLES, OR DENTS. DEFECTS UP TO 0.005 MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE
- 9) MAX AMPLITUDE OF RIPPING ALONG BENT PORTION OF THE TUBE IS 0.030. MAX CRUSHING 2% OVER ALL BEND LOCATIONS.
- 10) MAX TWIST: WITH TUBE LAYED FLAT ON SURFACE, THE DIFFERENCE BETWEEN THE CUFF HEIGHTS FROM THE SURFACE MAY BE NO LARGER THAN 0.38

RELEASED

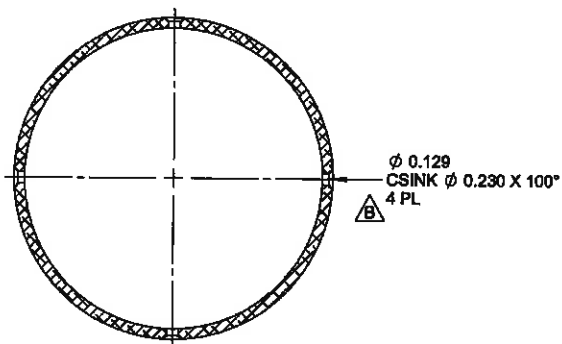
2019 FEB 25
EN 19-57

B	D5610-1: ADDED OUTER BENDS AND TRIM ENDS, REMOVED SECTION A-A D5610-3: DELETED Ø0.385 HOLES FOR SADDLES. SECTION C-C CSINK HOLES QTY 4 WAS QTY 6, DIM 0.935 WAS 0.875, 2.805 WAS 2.832	ZF	19.01.04
A	NEW ISSUE	ZF	19.05.07
REV.	DESCRIPTION	BY	DATE
DESIGN	NO	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	ZF		
CHECKED	MW	DRAWING NO.	REV. B
MFG. APPR.	JFS	D5610	SHEET 1 OF 3
APPROVED	NO	TITLE	SCALE
DE APPR.	CP 47	AFT X-TUBE (EC130)	NTS
DATE	19.01.04	COPYRIGHT © 2018 BY DART AEROSPACE LTD THIS DOCUMENT IS UNCLASSIFIED AND IS NOT TO BE USED FOR ANY PURPOSE OR DISSEMINATED TO ANY OTHER PERSON WITHOUT THE WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

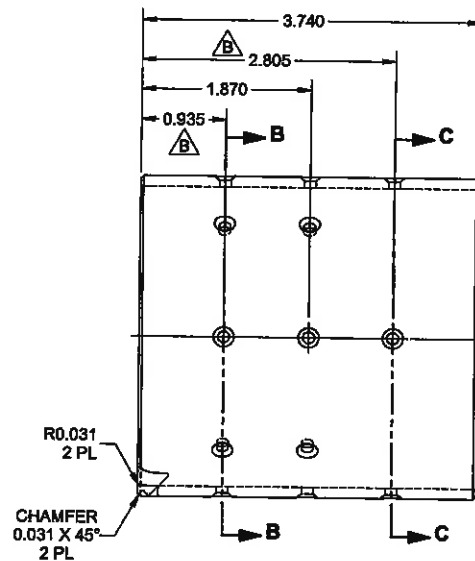




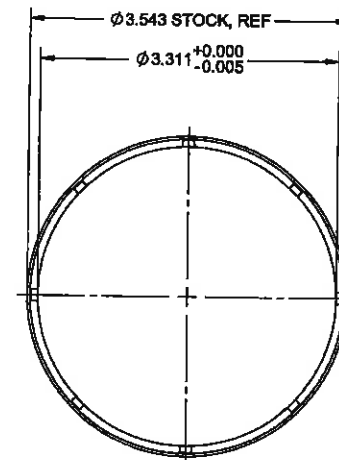
SECTION B-B
2 PL



SECTION C-C



D5610-3 CUFF



NOTES:

- 1) MATERIAL: MAKE FROM D6030-140
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 0.47 lbs

RELEASED

2019 FEB 25

APPROVED

DESIGN	NO	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	ZF		
CHECKED	MW	DRAWING NO.	REV. B
MFG. APPR.	JFS	D5610	SHEET 3 OF 3
APPROVED	NO	TITLE	SCALE
DE APPR.	CP	AFT X-TUBE (EC130)	NTS
DATE	19.01.04	COPYRIGHT © 2018 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED AS THE PROPERTY OF DART AEROSPACE LTD. IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR REPRODUCED IN ANY FORM OR BY ANY MEANS WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

Entered: JK Date: Oct 28/12



NCR No. 19-7584 **WORK ORDER NON-CONFORMANCE / ROUTE UPDATE**

Route update only ☐

Job: <u>197722</u>	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☒	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☒ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
Part No. <u>PS610-1TRN</u>					

Date: 19/7/31 Sequence #: _____ QTY Affected: 1 MRB (QS1042) INS 12 9/15/31

Description Work Order Deviation	Disposition	Completed By
Tube had surface marks in central region of cross-tube. <0.005" material was removed in some regions to remove marks.	Acceptable. Min O.D. = 3.538" (-0.005). Previous wall thickness were within 0.005" of nominal, D6530 allows ± 0.015 mm, ± 0.031 mm eccentricity. Tube is within allowable section properties by inspection.	<u>9/15/31</u> Lead hand / Supervisor DAS 47 19-07-05 9-89 QC / QA Coordinator DAS 68 9-89 SEP 05 2019

Root Cause Operator ☐ Manufacturing Process ☒ Equip/Tooling ☒ Handling/Preservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐	FAULT CATEGORY <table border="0"> <tr> <td>☐ Pressure/Forced</td> <td>☐ Contamination</td> <td>☐ Power Loss/Surge</td> <td>☐ Positioned Wrong</td> </tr> <tr> <td>☐ Bending</td> <td>☐ Misaligned/off center</td> <td>☐ Folio/Program</td> <td>☐ Outside Tolerance</td> </tr> <tr> <td>☐ Crushing</td> <td>☐ BOM/Route</td> <td>☐ Grain Direction</td> <td>☐ Drawing</td> </tr> <tr> <td>☐ Cracks</td> <td>☐ Broken/Damage/Defect</td> <td>☐ Weld</td> <td>☐ Finish</td> </tr> <tr> <td>☐ Crimp/Kink/Ripple/Wave/Twist</td> <td>☐ Incomplete/Unclear Instructions</td> <td>☐ Wrong Stock Pulled</td> <td>☐ Part Lost/Missing</td> </tr> <tr> <td>☒ Marks/Chatter</td> <td>☐ Drill Holes</td> <td>☐ Out of Sequence</td> <td>☐ Misread</td> </tr> <tr> <td>☐ Mislabeled</td> <td>☐ Fit/Function</td> <td>☐ Off-set/Set-up</td> <td></td> </tr> </table>	☐ Pressure/Forced	☐ Contamination	☐ Power Loss/Surge	☐ Positioned Wrong	☐ Bending	☐ Misaligned/off center	☐ Folio/Program	☐ Outside Tolerance	☐ Crushing	☐ BOM/Route	☐ Grain Direction	☐ Drawing	☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Finish	☐ Crimp/Kink/Ripple/Wave/Twist	☐ Incomplete/Unclear Instructions	☐ Wrong Stock Pulled	☐ Part Lost/Missing	☒ Marks/Chatter	☐ Drill Holes	☐ Out of Sequence	☐ Misread	☐ Mislabeled	☐ Fit/Function	☐ Off-set/Set-up	
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Other/Details:																													